To: McDonald, David[Mcdonald.Dave@epa.gov]; Snook, Hilary[snook.hilary@epa.gov]; Nelson, Eric[nelson.ericp@epa.gov]
From: Smagula, Amy
Sent: Mon 6/1/2015 7:02:45 PM
Subject: RE: Clam Survey
Asian Clam Substrate international Scale.xlsx
Asian Clam Substrate Krumbein Phi Scale.xlsx
Cobbetts Pond, Windham NH.pdf
Hooksett Pool Asian Clam Sampling Locations.pdf
Long Pond Pelham Asian Clam Sampling Points.pdf

Us too. We did a bunch for the first round of sampling two years ago and they took a long time to process, and we don't have the time to do it again.

Perhaps we can use some of the data we already have to cut down on sites, and maybe only new sites you sample can be checked for grain size analysis?

Attached are maps showing all the stations where we have sediment samples from, plus spreadsheets showing results from each site.

Amy

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Amy P. Smagula

Limnologist/Exotic Species Program Coordinator

NH DES

29 Hazen Drive

Concord, NH 03301

Phone: 603-271-2248

Fax: 603-271-7894

Email: Amy.Smagula@des.nh.gov
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From: McDonald, David [mailto:Mcdonald.Dave@epa.gov]
Sent: Monday, June 01, 2015 2:58 PM
To: Snook, Hilary; Nelson, Eric
Cc: Smagula, Amy
Subject: RE: Clam Survey

Hi all, sorry as Hil had "guessed" 48 samples for grain size is way beyond our capabilities.

Dave McDonald

USEPA New England Regional Laboratory

11 Technology Dr.

N. Chelmsford,MA 01863

(p) 617 918-8609

(f) 617 918-8509

(e) mcdonald.dave@epa.gov

From: Snook, Hilary
Sent: Monday, June 01, 2015 2:33 PM
To: Nelson, Eric
Cc: McDonald, David; Smagula, Amy
Subject: RE: Clam Survey

Hi Eric,

August 3-13 are open days for me as of now, with the exception of August 6.

Don't know if you are thinking about grain size analysis on 48+ samples or not. If

so, it probably is beyond what we can support based on our dwindling resources here, but I'll let Dave confirm on that one.

I like your coffee can concept for a specific depth and volume, although it may be challenging pushing it through gravelly substrate.

Keep me posted!

Hilary

From: Nelson, Eric
Sent: Thursday, May 28, 2015 4:37 PM
To: Snook, Hilary; Smagula, Amy
Subject: Clam Survey

Hi:

I've been looking into various benthic sampling techniques that might be best suited for the bottom in Hooksett Pool which can range from silt to coarse sand, but from sampling done by Normandeau most stations sampled had medium to coarse sand. Fine sand was more common further downstream towards the dam, which makes sense. I'm thinking of using a modified coffee can that a diver could push down into the sediment, and then slip one lid on underneath and one on top. The can would be marked on the outside at the desired sample depth so the samples would be of uniform volume. We could use a quadrat and shovel like we did last fall, but we don't know the volume of the sample, only the area. I also considered a weighted Peterson-type grab, which is what was used for the studies on the St. Lawrence (Simard, et al. 2012) and lower Connecticut R. (Morgan et al. 2003). I think that would work well for most sites in Hooksett Pool, but think it might not be as effective in the coarser material in/near the mouth of the discharge canal. You both probably have more experience with Peterson grabs. Thoughts?

I'd like to focus much of the sampling in fairly close proximity to the mouth of the discharge canal, but extend it across the river. I'm envisioning an area extending about 500 feet or so upstream and downstream of the discharge canal divided into a grid of 12 sampling areas in which 2 samples are collected in each. The area within the mouth of the discharge canal would be divided into two areas, each getting sampled twice, as well. So under this plan, 28 samples would be collected in proximity to the discharge canal. I would also like to collect samples at the previous sampling locations upstream (N-5, N-10) and downstream (S-12, S-17) for an additional 24 samples. I still need to verify the necessary number of samples to make it statistically robust, so the current plan is subject to change.

The following is what I'd like to collect at each sampling site:

Position, depth, water temperature, benthic core/grab, photo still of bottom, sediment sample (from core?)

From each sample I'm interested in # clams, # mussels, # other benthic infauna/epifauna. Normandeau collected sediments for grain size analysis in 2011 at many of the sampling locations we'll be visiting, so I'm most interested in taking a sample or two for analysis in/near the mouth of the discharge canal where clam density was greatest.

Identifying and enumerating infauna obviously requires someone with the proper training. For this study, I'm really only interested in knowing what the clam density is, its relative abundance to other macroinverts in general, and native mollusks in particular. Clam density is the most important data, so, if processing this number of samples is an issue, perhaps we can count and measure clams in each sample, and then preserve the other inverts in the sample for future analysis. We could also do the full work-up on a representative subset. Need to investigate this further. Any suggestions?

In other news, I just heard I may get tapped to serve as acting manager for my unit in July. If so, I may want to push this to early August, if possible, which we had already discussed. Amy, you mentioned that the first week of August would be better for you, but you have others to help assist if we go the last week in July. Hilary, you thought you might be available the first week of August but needed to check. Could you both let me know if 1-2 days the first week in August would work for you?

Look forward to hearing your thoughts about this sampling plan. Obviously, I need to put

together a more formal plan with QAPP, but I wanted to share this with you.

Thanks.

Eric

Eric P. Nelson

Ocean and Coastal Protection Unit

Unit Dive Officer

U.S. Environmental Protection Agency

New England Region, 5 Post Office Square,

Suite 100, Mail Code OEP06-1, Boston, MA 02109-3912

Ph: 617.918.1676 -- nelson.ericp@epa.gov